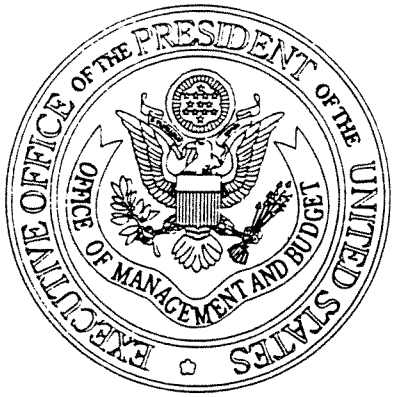
CIRCULAR NO. A–11

PART 3

PLANNING, BUDGETING, AND ACQUISITION OF CAPITAL ASSETS



EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF MANAGEMENT AND BUDGET

JUNE 1997

Planning, Budgeting, and Acquisition of Capital Assets

Summary of Changes

—Agencies may substitute an alternative format for exhibit 300B (Capital Asset Plan and Justification), at the discretion of OMB (section 300.7).

—Instructions have been updated to reflect "Principles of Budgeting for Capital Asset Acquisitions" (Appendix 300A).

300.1. Purpose.

Part 3 of this Circular provides guidance to agencies on planning, budgeting, and acquisition of capital assets, requires agencies to provide information on these assets in their budget submissions to OMB, and includes guidelines for planning. Agency submissions on plans for capital assets are required for OMB review of funding requests and evaluation of new and ongoing projects.

Part 3 also presents unified guidance designed to coordinate the collection of agency information for the OMB report to the Congress required by the Federal Acquisition Streamlining Act of 1994 (FASA) (Title V) and to ensure that acquisition plans support the mission statements, long-term goals and objectives, and annual performance plans developed pursuant to the Government Performance and Results Act of 1993 (GPRA). Agency submissions will allow OMB to carry out its reporting responsibilities under FASA without issuing additional central guidance.

In developing their capital plans, agencies should follow the *Principles of Budgeting for Capital Asset Acquisitions* and the additional guidance in Appendix 300B. The *Principles* were published in the *Analytical Perspectives* volume of the *FY 1998 Budget* and appear in Appendix 300A.

300.2. Background.

(a) General.—The Federal Government needs to manage better the planning, budgeting, and acquisition of capital assets, including information technology. The National Performance Review in 1993 and recent legislation suggest widespread concern in the agencies and in Congress that the Government must improve its performance in this area.

For the last three years OMB has issued guidance on asset acquisition to the agencies, conducted crosscutting reviews, and addressed specific asset acquisition issues in agency review sessions during the fall budget process. At the same time, new statutory performance-based reporting and review requirements have been created in GPRA and FASA that complement the goals of OMB's asset acquisition review.

Part 3 encourages agencies to focus on the importance of capital assets, including information technology, in carrying out the mission of the agency within the context of the existing scoring rules and the limits on discretionary spending.

(b) Recent major legislation related to capital assets.—Under FASA (Title V), OMB is required to report on the cost, schedule, and performance goals for asset acquisitions and how well agencies are meeting the goals. GPRA requires agencies to develop mission statements, long range strategic goals and objectives, and annual performance plans. GPRA becomes effective government-wide in September 1997, when agencies transmit strategic plans to Congress and OMB, and submit the annual performance plan for fiscal year 1999 to OMB with the agency's budget request. Part 2 of this Circular provides guidance to the agencies on the preparation and submission of strategic plans and annual performance plans.

(c) Capital Programming Guide.—To supplement guidance on planning, budgeting, acquiring, and managing capital assets, OMB has published the *Capital Programming Guide* (June 1997). The purpose of the *Guide* is to provide professionals in the Federal Government a basic reference on principles and techniques for planning, budgeting, acquisition, and management of capital assets. Agencies should consult the *Guide* when preparing their capital plans and developing their budget requests from their capital plans.

300.3. General requirements.

Agencies are required to provide the following information related to acquisition of capital assets as a part of their initial budget submissions (see due date in Part 1, section 10.3 (a)). For Cabinet and other agencies subject to executive branch

review and the District of Columbia, the due date is September 8, 1997. The required materials are:

—information on the impact of full funding of capital assets now funded incrementally (exhibit 300A), using the coverage described in section 300.5 (d).

—a capital asset plan and justification (exhibit 300B) for major acquisitions identified pursuant to section 300.6(b).

Exhibit 300A requires information for accounts with projects funded incrementally. This will allow for an identification of budget authority needed to fully fund accounts with these projects.

Exhibit 300B requires information on plans and justifications for major acquisitions as identified in section 300.6(b). This information includes a summary of spending for project stages; justification and other information; and cost, schedule, and performance goals.

300.4. Definitions.

For purposes of this Circular, the following definitions apply. Additional definitions appear as a Glossary to Appendix A.

(a) Capital assets.—Capital assets are land, structures, equipment, and intellectual property (e.g., software) that are used by the Federal Government and have an estimated useful life of two years or more. Capital assets exclude items acquired for resale in the ordinary course of operations or held for the purpose of physical consumption such as operating materials and supplies. The cost of a capital asset includes both its purchase price and all other costs incurred to bring it to a form and location suitable for its intended use.

Capital assets may be acquired in different ways: through purchase, construction, or manufacture; through a lease-purchase or other capital lease, regardless of whether title has passed to the Federal Government; through an operating lease for an asset with an estimated useful life of two years or more; or through exchange. Capital assets include leasehold improvements and land rights; assets owned by the Federal Government but located in a foreign country or held by others (such as Federal contractors, state and local governments, or colleges and universities); and assets whose ownership is shared by the Federal Government with other entities. Capital assets include not only the assets as initially acquired but also additions; improvements; replacements; rearrangements and reinstallations; and major repairs, but not ordinary repairs and maintenance.

Examples of capital assets include the following, but are not limited to them:

- office buildings, hospitals, laboratories, schools, and prisons;
- dams, power plants, and water resources projects;
- furniture, elevators, and printing presses;
- motor vehicles, airplanes, and ships;
- satellites and space exploration equipment;
- information technology capital assets including those that are a national security system (as defined in section 5142 of the ITMRA; see section 300.4 (f) below) to the extent practicable;
- Department of Defense weapons systems; and
- environmental restoration (decontamination and decomissioning efforts).

Capital assets may or may not be capitalized (i.e., recorded in an entity's balance sheet) under Federal accounting standards. Examples of capital assets that are not capitalized are Department of Defense weapons systems, heritage assets, stewardship land, and some software.

Capital assets do not include grants for acquiring capital assets made to state and local governments or other entities (such as National Science Foundation grants to universities or Department of Transportation grants to AMTRAK). Capital assets also do not include intangible assets such as the knowledge resulting from research and development or the human capital resulting from education and training, although capital assets do include land, structures, equipment, and intellectual property (e.g., software) that the Federal Government uses in research and development and education and training.

(b) Capital project and useful segments of a capital project.—The total capital project, or acquisition of a capital asset, includes useful segments that are either planning segments or useful assets.

(1) *Planning segments.*—A planning segment of a capital project provides information that allows the agency to develop the design; assess the benefits, costs, and risks; and establish realistic baseline cost, schedule, and performance goals before proceeding to full acquisition of the useful asset (or canceling the acquisition). This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. The process of gathering information for a capital project may consist of one or more planning segments, depending on the nature of the asset. If the project includes a prototype that is a capital asset, the prototype

may itself be one segment or may be divisible into more than one segment. Because of uncertainty regarding the identification of separate planning segments for research and development activities, the application of full funding concepts to research and development planning will need more study pending preparation of the 1999 budget.

(2) *Useful asset.*—A useful asset is an economically and programmatically separate segment of the asset procurement stage of the capital project that provides an asset for which the benefits exceed the costs, even if no further funding is appropriated. The total capital asset procurement may include one or more useful assets, although it may not be possible to divide all procurements in this way. Illustrations follow:

Illustration 1: If the construction of a building meets the justification criteria and has benefits greater than its costs without further investment, then the construction of that building is a "useful segment." Excavation is not a useful segment because no useful asset results from the excavation alone if no further funding becomes available. For a campus of several buildings, a useful segment is one complete building if that building has programmatic benefits that exceed its costs regardless of whether the other buildings are constructed, even though that building may not be at its maximum use.

Illustration 2: If the full acquisition is for several items (e.g., aircraft), the useful segment would be the number of complete aircraft required to achieve benefits that exceed costs even if no further funding becomes available. In contrast, some portion of several aircraft (e.g., engines for five aircraft) would not be a useful segment if no further funding is available, nor would one aircraft be a useful segment if two or more are required for benefits to exceed costs.

Illustration 3: For information technology, a module (the information technology equivalent of "useful segment") is separable if it is useful in itself and its benefits exceed its costs without subsequent modules. The module should be designed so that it can be enhanced or integrated with subsequent modules if future funding becomes available.

(c) Funding (full funding and incremental (partial) funding).—*Full funding* means that appropriations—regular annual appropriations or advance appropriations—are enacted that are sufficient in total to complete a useful segment of a capital project before any obligations may be incurred for that segment. Full funding for an entire capital project is required if the project cannot be divided into more than one useful segment. If the asset can be divided into more than one useful segment, full funding for a project may be desirable, but is not required to constitute full funding.

Incremental (partial) funding means that appropriations—regular appropriations or advance appropriations—are enacted for just part of a useful segment of a capital project, if the project has useful segments, or for part of the capital project as a whole, if it is not divisible into useful segments. Incremental funding for a capital asset, in which funds could be obligated to start the segment (or project), despite the fact that they are insufficient to complete a useful segment or project, is not permitted under Circular A–11 principles.

(d) Baseline goals.—Baseline cost, schedule, and performance goals will be the standard against which actual work is measured. They will be the basis for the annual report to the Congress required by FASA (Title V) on variances of 10 percent or more from cost and schedule goals and any deviation from performance goals. The baseline goals, and any changes to the baseline goals, must be approved by OMB.

(1) *Cost and schedule goals.*—The baseline cost and schedule goals should be realistic projections, developed through the capital planning process, of the total cost and total time to complete the project and interim cost and schedule goals. Cost goals must include the estimated cost of the contract(s) and the Government's management costs. Cost goals are to be reviewed by the Chief Financial Officer prior to inclusion in the budget submission.

(2) *Performance goals.*—The performance goals should clearly define the mission-related performance measures or other results the acquisition is expected to accomplish. When possible, performance goals should be expressed in quantitative terms as reflected in contractual statements of work.

(3) *Illustrative major milestones in establishing goals.*—Establishment of the final baseline goals for management of the acquisition and reporting to Congress may undergo changes during the budget process and as the contracts are awarded. Illustrative major milestones in establishing or proposing revised baseline goals could be:

—submission to OMB with initial justification for a new acquisition program;

—approval for inclusion in the Administration's budget proposal to Congress;

—enactment of appropriations;
—contract awards.

(e) Information technology.—Section 5002 (3) of the Information Technology Management Reform Act (ITMRA) of 1996 defines information technology as:

"(3) INFORMATION TECHNOLOGY.—(A) The term 'information technology,' with respect to an executive agency means any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. For purposes of the preceding sentence, equipment is used by an executive agency if the equipment is used by an executive agency directly or is used by a contractor under a contract with the executive agency which (i) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product.

(B) the term 'information technology' includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

(C) Notwithstanding subparagraphs (A) and (B), the term 'information technology' does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract."

(f) Information technology systems for national security.—Section 5142 of ITMRA defines a national security system as:

"(a) DEFINITION.—In this subtitle, the term 'national security system' means any telecommunications or information system operated by the United States Government, the function, operation, or use of which—

(1) involves intelligence activities;
(2) involves cryptologic activities related to national security;
(3) involves command and control of military forces;
(4) involves equipment that is an integral part of a weapon or weapons system;
(5) subject to subsection (b), is critical to the direct fulfillment of military intelligence missions.

(b) LIMITATION.—Subsection (a)(5) does not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications)."

300.5. Full funding policy for capital assets.

(a) Background.—Good budgeting requires that appropriations for the full costs of asset acquisition be enacted in advance to help ensure that all costs and benefits are fully taken into account when decisions are made about providing resources. For most spending on acquisitions, this rule is followed throughout the Government. When capital assets are funded in increments, without certainty if or when future funding will be available, it can and occasionally does result in poor planning, acquisition of assets not fully justified, higher acquisition costs, project delays, cancellation of major projects, the loss of sunk costs, or inadequate funding to maintain and operate the assets.

(b) Full funding policy.—Part 3 reaffirms the policy stated in Part 1, section 12.3(1). The full funding policy requires that each useful segment (or module) of a capital project be fully funded in advance with regular annual appropriations or advance appropriations. For definitions of these terms, see section 300.4 or the Glossary to Appendix 300A. Appendix 300A elaborates on the full funding concept (see Principles of Financing).

For the initial budget submissions, agencies are required to request full budget authority for all ongoing and new proposals for capital assets covered in (c) below, or at least for each useful segment of a capital project.

Agencies are to identify in the initial budget submission any additional budget authority required to implement full funding. Adjustments to agency planning guidance levels will be considered based on agency budget submissions.

The additional amount of budget authority to fully fund projects now funded incrementally is to be displayed on exhibit 300A , which is discussed in (d) below.

(c) Coverage of full funding policy.—The full funding policy applies to all capital assets as defined in section 300.4(a).

(d) Coverage and explanation of "Impact of Full Funding of Capital Assets" (exhibit 300A).—Agencies are required to identify the amount of budget authority in the format of exhibit 300A: "Impact of Full Funding of Capital Assets" for capital assets as defined in 300.4 (a) above for projects funded incrementally. The purpose of this exhibit is to identify by account, not by individual project, the amount of budget authority needed to fully fund projects now funded incrementally, and to indicate how the agency would recommend implementing

the full funding policy. The agency should reassess whether the remaining amount of budget authority needed to complete the project affects justification for the project.

EXPLANATION OF EXHIBIT 300A: IMPACT OF FULL FUNDING OF CAPITAL ASSETS

Entry	Description
General	For the years shown, show budget authority in millions for accounts with projects funded incrementally. In the column "BY+5 and beyond", show the amounts needed to complete projects begun in BY+4 or earlier. In the "total" column show the sum of budget authority for unfunded projects for the years BY+1 and beyond. Show only the total amount for the incrementally funded projects in the account. Do not show the amounts for each project. PY is past year, CY is current year, and BY is budget year.
PART I: NEW PROJECTS FUNDED BEGINNING IN BY THROUGH BY+4	
A. Annual incremental amounts of budget authority requested for new projects	Show here the amounts of budget authority in the agency request, for each account, for new proposed projects funded incrementally beginning in BY through BY+4. Show the total for each account separately and the agency total.
B. Agency recommendation for redistribution to useful segments (or modules) that are fully funded.	Show here the agency recommendation for redistribution of budget authority to useful segments (or modules) that are fully funded with either regular or advance appropriations. Show the total for each account separately and the agency total.
PART II: PAST PROJECTS FUNDED IN CY OR EARLIER	
A. Annual incremental amounts of budget authority requested for past projects	Show here the amounts of budget authority in the agency request, for each account, for projects funded incrementally in past years (i.e., with budget authority beginning in CY or earlier). Show the total for each account separately and the agency total.
B. Agency recommendation for redistribution to useful segments (or modules) that are fully funded.	Show here the agency recommendation for redistribution of the budget authority to useful segments (or modules) that are fully funded with either regular or advance appropriations. Show the total for each account separately and the agency total.

300.6. Criteria and coverage of "Capital Asset Plan and Justification" (exhibit 300B).

(a) **Criteria.**—Exhibit 300B covers major acquisitions–those requiring special management attention because of their importance to the agency mission; high development, operating, or maintenance costs; high risk; high return; or their significant role in the administration of agency programs, finances, property, or other resources.

(b) **Coverage for this year.**—Agencies should report on all major acquisitions. Agencies should consult with their OMB representative to decide which specific projects should be classified as major acquisitions, building on what was provided in response to Part 3 last year for the *FY 1998 Budget.*

(c) **Future years.**—Agencies should develop capital plans for all acquisitions, not just the major acquisitions covered by the criteria in (a).

300.7. Information required: explanation of "Capital Asset Plan and Justification" (exhibit 300B).

For each asset identified pursuant to section 300.6 (b), the agency is required to submit with its initial budget submission the information on capital assets shown in exhibit 300B: "Capital Asset Plan and Justification." Submissions for information technology capital projects should have the concurrence of the Chief Information Officer. Exhibit 300B is an illustrative format, not a required format. Agencies may submit the information in a different format, if it is acceptable to their OMB representative.

EXPLANATION OF EXHIBIT 300B: CAPITAL ASSET PLAN AND JUSTIFICATION

Entry	Description
Heading	Identify the agency, bureau, account title and identification code, the program activity from the most recent budget Appendix, and the name of the project.

EXPLANATION OF EXHIBIT 300B: CAPITAL ASSET PLAN AND JUSTIFICATION—Continued

Entry	Description
	Indicate whether it is a new project proposed in the agency budget request for BY or later, or whether it is an ongoing project funded in CY or earlier. Indicate whether it is an information technology project as defined in section 300.4 (e). PY is past year, CY is current year, and BY is budget year.
PART I: SUMMARY OF SPENDING FOR PROJECT STAGES	
Summary of spending for project stages	Provide the budget authority and outlay estimates in millions of dollars for the table. The stages shown in the table—planning, full acquisition, and maintenance—are illustrative. After consulting with the agency, the OMB representative will advise the agency of the stages for reporting.
PART II: JUSTIFICATION AND OTHER INFORMATION	
A. Justification	Provide a full justification for the asset and the cost of the asset. This should include but not be limited to a clear statement of how the asset will help the agency meet the agency mission, accomplish its long term strategic goals and objectives, and adhere to the annual performance plan being developed under GPRA. The justification should answer the three pesky questions from the *Capital Programming Guide:* (1) Does the investment support core/priority mission functions that need to be performed by the Federal Government? (2) Does the investment need to be undertaken by the requesting agency because no alternative private sector or governmental source can better support the function? (3) For information technology and for other investments as appropriate, does the investment support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial, off-the-shelf technology? The justification should also include the basis for selecting the project; an analysis of full life-cycle costs; a cost-benefit analysis, if required; an analysis of alternative options; the underlying assumptions; an estimate of the risk and uncertainty in meeting the goals; and other information requested by the OMB representative or important to the agency, based on the *Principles of Budgeting for Capital Asset Acquisitions* in Appendix 300A. Additional information requested by the OMB representative may include asset-specific information. For buildings, for example, this could include cost per square foot estimates for comparable Federal and private sector facilities.
B. Program management	Identify whether there is a program manager and contracting officer devoted to the project. Identify also whether an Integrated Project Team will be established to assist in the management of the project. An Integrated Project Team is a multidisciplinary team led by the program manager to manage the acquisition process. Team members may change somewhat for different phases of the project, but members must represent those who have a major interest in the project. Members should be full time or dedicated to the program when needed. Members should include qualified people able to advise the program manager about technical, business, project, schedule, procurement, finance, and other issues, and identify concerns of the users of the acquisition.
C. Contract strategy	Identify whether the statement of work is performance-based and summarize the performance goals in the contract. Identify the preferred type of contract and why it was chosen. Identify other types of contracts that were considered and indicate why they were not selected.
PART III: COST, SCHEDULE, AND PERFORMANCE GOALS	

Agency plans must have baseline cost, schedule, and performance goals for all proposed and ongoing acquisitions. The establishment and analysis of goals should include a risk assessment that discusses the probability of achieving them. If the agency does not already have baseline goals established in prior years that the OMB representative has approved, the agency must propose new baseline goals this year. Once established, the baseline goals will be used to determine whether the acquisition is meeting Congressional policy to achieve at least 90 percent of cost and schedule goals and full achievement of the performance goals.

The agency planning process is expected to produce acquisition plans that have a high probability of successfully achieving goals. Agencies should establish appropriate controls to ensure that capital asset acquisitions that are underway are within baseline cost, on schedule, and expected to meet the baseline performance levels.

EXPLANATION OF EXHIBIT 300B: CAPITAL ASSET PLAN AND JUSTIFICATION—Continued

Entry	Description
Request funding for only the stages where the agency is able to establish realistic cost, schedule, and performance goals. If the acquisition planning has not progressed to the point where the agency is ready to commit to achievement of specific goals for the completion of the acquisition, the agency should request funds for the planning and alternative exploration stages, as necessary, of the acquisition and not the entire acquisition. Funds for the production or installation stage should not be requested until firm goals can be set.	
A. Description of performance-based system	Identify and discuss the performance-based management system(s) used to monitor the achievement of, or deviation from, baseline goals during the life-cycle of the acquisition and the use of the asset. Explain whether it is an "earned value" management system (see Appendix 300C) or other type of management information system. Explain how the system: (1) identifies the amount of planned work actually accomplished; (2) compares actual work accomplished against planned work and actual costs incurred by the contractor against planned costs; and (3) establishes the deviation percentage from goals.
B. Previous baseline goals	When a revised baseline is approved, for historic purposes the originally approved baseline and any interim approved baselines will be retained and displayed in this section.
1. Previous cost and schedule goals	Identify here previously approved baseline cost and schedule goals.
2. Previous performance goals	Identify here previously approved baseline performance goals.
C. Baseline goals	Identify baseline cost, schedule, and performance goals currently in effect.
1. Cost and schedule goals	The baseline cost and schedule goals should include total costs for the project, important components of the project, and important interim cost projections. It should also show how many months it will take to complete the project and important milestones within that schedule. The example shows a $250 million project and an annual schedule of planned completed work from BY through project completion. It shows that $5 million of the work is expected to be completed by the end of BY, $55 million by the end of BY+1, and so forth.
2. Performance goals	Summarize the performance goals for the acquisition as stated in the statement of work, and show how the asset will help the agency meet its overall mission, strategic goals and objectives, and annual performance plan being developed under GPRA. Identify the probability of meeting the goals, and whether an independent risk assessment was completed. Identify the key programmatic assumptions used to determine the performance goals.
D. Current estimate	Identify current estimates based on work performed. If baseline goals are being established for the first time this year and are the same as the current estimate, leave this section blank and report only in C.
1. Cost and schedule goals	Identify current estimates of cost and schedule goals (C.1 above).
2. Performance goals	Identify current estimates of performance goals (C.2 above).
E. Variance from baseline goals	Monitoring actual work performed against baseline goals is a year-round activity. Agencies should compare current estimates with the baseline goals and report on the variance. If baseline goals are being established for the first time this year and are the same as the current estimate, leave this section blank.
1. Variance in cost	Report on whether current estimates of cost are 10 percent or more above the baseline. If so, discuss and give the reasons for the variance.
2. Variance in schedule	Report on whether the schedule is 10 percent or more behind the baseline. If so, discuss and give the reasons for the variance.
3. Variance in performance goals	Report on whether the performance goals deviate at all from the baseline. If so, discuss and give the reasons for the variance.
F. Corrective actions	Identify corrective actions that have been or will be taken if the current cost or schedule estimates have a negative variance of 10 percent or more, or if there is any variance for performance measures. Identify the effect the actions will have on cost, schedule, and performance. Explain how the project will be brought back within baseline goals or, if not, how and why the goals should be revised and whether the project is still cost beneficial and justified.
G. Proposed revisions to baseline goals	Agencies may propose revisions to the baseline cost, schedule, and performance goals if current estimates indicate they are not achievable. The proposed revisions must be justified, with an estimated probability of achieving the new goals. OMB must approve any changes to the baseline goals.

300.8. Additional information.

Agencies are encouraged but not required to provide additional information on the following or other topics related to improving planning, budgeting, and acquisition of capital assets. These topics may be included in the OMB budget review process on capital assets, which may affect policy decisions on asset acquisition. Agencies are encouraged to raise any issues considered relevant.

(a) **Lumpiness or spikes.**—Lumpiness or spikes (i.e., large, one-time increases in year-to-year appropriations) may create bias against acquiring assets. Agencies should give special attention to these spikes for justified, cost-beneficial acquisitions, although resources will continue to be constrained by the budget authority and outlay limits under the government-wide discretionary caps. This issue is addressed in Appendix 300A: C: Principles of Financing.

(b) **Account structure.**—Certain types of accounts may be preferred to help ensure there is no bias against the acquisition of capital assets. Agencies are encouraged to review the account structure to ensure that the most appropriate accounts are being used for the acquisition of capital assets. This issue also is addressed in Appendix 300A: C: Principles of Financing.

(1) *Mixed accounts.*—Mixed accounts have spending for both operating and capital asset acquisition in the same account, allowing for competition between the two. Demands for one may "crowd out" the other.

(2) *Asset acquisition accounts.*—These accounts are devoted exclusively to the acquisition of capital assets. This type of account may be one way of avoiding lumpiness, if there is a roughly similar level of fully funded budget authority for asset acquisition each year.

(3) *Revolving funds.*—These accounts can also avoid lumpiness, depending on how they are structured. They purchase assets that are "rented" to other accounts, so that the accounts and programs using the assets have a roughly steady year-to-year payment.

(c) **Multi-year availability of appropriations.**—Agencies should ensure that the availability of the requested appropriation allows enough time to complete the acquisition process. If the acquisition process may require more than one year, the appropriations should be made available for the number of years necessary (see Part 1, section 12.3(k)).

(d) **Other observations.**—Agencies are invited to suggest other methods to improve planning, budgeting, and the acquisition of capital assets.

Impact of Full Funding of Capital Assets

Report all incrementally funded capital assets covered by the definition in section 300.4(a).

PY-past year
CY-current year
BY-budget year

Example assumes one new $50 million project started each year, funded at $10 million per year for five years.

DEPARTMENT OF GOVERNMENT

(budget authority in millions)

	PY	CY	BY	BY+1	BY+2	BY+3	BY+4	BY+5 and beyond	Total, unfunded amounts (Sum: BY+1 and beyond)
PART I: NEW PROJECTS FUNDED BEGINNING IN BY THROUGH BY+4:									
A. Annual incremental amounts of budget authority requested for new projects:									
Capital asset account No. 1..	na	na	10	20	30	40	50	100	240
Capital asset account No. 2..	na	na							
Etc.	na	na							
Agency total	na	na							
B. Agency recommendation for redistribution to segments (or modules) that are economically and programmatically separable and fully funded:									
Capital asset account No. 1..	na	na	50	50	50	50	50	na	na
Capital asset account No. 2..	na	na						na	na
Etc.	na	na						na	na
Agency total	na	na						na	na

Example assumes one new $50 million project fully funded each year.

PART II: PAST PROJECTS FUNDED IN CY OR EARLIER:									
A. Annual incremental amounts of budget authority requested for past projects:									
Capital asset account No. 1..	50	50	40	30	20	10	0	0	60
Capital asset account No. 2..									
Etc.									
Agency total									

Example assumes incrementally funded $50 million projects at $10 million per year.

B. Agency recommendation for redistribution to segments (or modules) that are economically and programmatically separable and fully funded:									
Capital asset account No. 1..	na	na	95					na	na
Capital asset account No. 2..	na	na						na	na
Etc.	na	na						na	na
Agency total	na	na						na	na

Example assumes all BA funded in BY, and $5 million savings resulting from full funding.

Identify in Part I.A or in Part II.A. the annual incremental budget authority in the agency submission for capital assets. In Part I.B. or II.B. identify the agency plan for fully funding these projects with regular or advance appropriations.

"na" indicates not applicable.

Capital Asset Plan and Justification

Agency: Department of Government
Bureau: Bureau of Capital Assets
Account title: Asset acquisition
Account identification code: xxx-xx-xxxx
Program activity:
Name of project:
Check one: New project _____ Ongoing project _____
Check one: Is this project information technology (see section 300.4(e) for a definition)? Yes ___ No ___

PY-past year
CY-current year
BY-budget year

Note: Exhibit 300B is an illustrative format. The information requested may be submitted in a different format, if it is acceptable to the OMB representative.

PART I: SUMMARY OF SPENDING FOR PROJECT STAGES

(In millions)

	PY-1 and earlier years	PY	CY	BY	BY+1	BY+2	BY+3	BY+4	BY+5 and beyond	Total
Planning:										
Budget authority				10						10
Outlays				7	3					10
Full acquisition: [1]										
Budget authority						250	0	0	0	250
Outlays						25	75	125	25	250
Total, sum of stages (excludes maintenance):										
Budget authority				10	0	250	0	0	0	260
Outlays				7	3	25	75	125	25	260
Maintenance:										
Budget authority								5	na	na
Outlays								5	na	na

[1] Identify whether the data are for all segments of this stage or for an economically and programmatically useful segment of the entire stage.
"na" indicates not applicable.

PART II: JUSTIFICATION AND OTHER INFORMATION

A. Justification

A full justification for the asset and the cost of the asset is required. This should include but not be limited to a clear statement of how the asset will help the agency meet the agency mission, its long term strategic goals and objectives, and the annual performance plan being developed under GPRA; the basis for selecting the project; an analysis of full life-cycle costs; a cost-benefit analysis, if required; an analysis of alternative options; the underlying assumptions; an estimate of the risk and uncertainty in meeting the goals; and other information requested by the OMB representative or important to the agency, based on the *Principles of Budgeting for Capital Asset Acquisitions* in Appendix 300A.

Additional information requested by the OMB representative may include asset-specific information. For buildings, for example, this could include cost per square foot estimates for comparable Federal and private sector facilities.

B. Program management

1. Is there a program manager and contracting officer devoted to the project?

2. Will an Integrated Project Team be established to assist with the management of the project?

C. Contract strategy

1. Identify whether the statement of work is performance-based. Summarize the performance goals in the contract.

2. Identify the preferred type of contract and why it was chosen. Identify other types of contracts that were considered and why they were not selected.

Capital Asset Plan and Justification—Continued

PY-past year
CY-current year
BY-budget year

PART III: COST, SCHEDULE, AND PERFORMANCE GOALS

A. Description of performance-based system:

[Describe the performance-based system used to monitor the achievement or deviation from goals during the life cycle of the project. Identify whether this is an "earned value" system as discussed in Appendix 300C.]

(In millions)

	PY-1 and earlier years	PY	CY	BY	BY+1	BY+2	BY+3	BY+4	BY+5 and beyond	Total
B. Previous baseline goals:										
1. Previous cost and schedule goals [Identify previously approved baseline cost and schedule goals, if any.]										
2. Previous performance goals [Identify previously approved baseline performance goals, if any.]										
C. Baseline goals:										
1. Cost and schedule goals				5	50	100	50	40	5	250

[Using the performance-based management system discussed in A. above, show the dollar amount of the project that will be completed each year. Identify and discuss how many months it will take to complete the acquisition, important components, and important milestones within that time. The example shows a $250 million project and an annual schedule of planned completed work from BY through project completion. It shows, for example, that $5 million of the work is expected to be completed by the end of BY, $55 million by the end of BY+1, and so forth.]

2. Performance goals:

[Summarize the performance goals of the acquisition as stated in the statement of work, and describe the relationship of the acquisition to the overall mission of the agency.]

D. Current estimate:

1. Cost and schedule goals [Identify current estimates of cost and schedule goals (C.1)]

2. Performance goals [Identify current estimates of performance goals (C.2)]

E. Variance from baseline goals:

1. Variance in cost:

[Identify whether the current cost estimate is 10 percent or more above the baseline goals. Discuss and give reasons for the variance.]

2. Variance in schedule:

[Identify whether the current schedule estimate is 10 percent or more behind the baseline schedule. Discuss and give reasons for the variance.]

3. Variance in performance goals:

[Identify whether performance goals deviate at all from the baseline plan. Discuss and give reasons for the variance.]

F. Corrective actions:

[Discuss corrective actions needed or that have been taken to complete the project and the effect on final total cost, schedule, and performance goals.]

G. Proposed revisions to baseline goals:

[Agencies may propose revisions to the baseline cost, schedule, and performance goals if current estimates indicate the goals are not achievable. The proposed revisions must be justified, with an estimated probability of achieving the new goals. OMB must approve any changes to the baseline goals.]

For additional explanation, see section 300.7. If baseline goals are being established for the first time this year and are the same as current estimates, leave sections D, E, F, and G blank.

APPENDIX 300A

Principles of Budgeting for Capital Asset Acquisitions

Introduction and Summary

The Administration plans to use the following principles in budgeting for capital asset acquisitions. These principles address planning, costs and benefits, financing, and risk management requirements that should be satisfied before a proposal for the acquisition of capital assets can be included in the Administration's budget. A Glossary describes key terms. OMB has also published the *Capital Programming Guide* (June 1997), which is a basic reference on principles and techniques for planning, budgeting, acquisition, and management of capital assets. Agencies should consult the *Guide* when preparing their capital plans and developing their budget requests from their capital plans.

The principles are organized in the following four sections:

A. *Planning.*—This section focuses on the need to ensure that capital assets support core/priority missions of the agency; the assets have demonstrated a projected return on investment that is clearly equal to or better than alternative uses of available public resources; the risk associated with the assets is understood and managed at all stages; and the acquisition is implemented in phased, successive segments, unless it can be demonstrated there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time.

B. *Costs and Benefits.*—This section emphasizes that the asset should be justified primarily by benefit-cost analysis, including life-cycle costs; that all costs are understood in advance; and that cost, schedule, and performance goals are identified that can be measured using an earned value management system or similar system.

C. *Principles of Financing.*—This section stresses that useful segments are to be fully funded with regular or advance appropriations or both, enforced by a proposed new Budget Enforcement Act scorekeeping rule; that as a general rule, planning segments should be financed separately from procurement of the asset; and that agencies are encouraged to aggregate assets in capital acquisition accounts and take other steps to accommodate lumpiness or "spikes" in funding for justified acquisitions.

D. *Risk Management.*—This section is to help ensure that risk is analyzed and managed carefully in the acquisition of the asset. Strategies can include separate accounts for capital asset acquisitions, the use of apportionment to encourage sound management, and the selection of efficient types of contracts and pricing mechanisms in order to allocate risk appropriately between the contractor and the Government. In addition cost, schedule, and performance goals are to be controlled and monitored by using an earned value management system or a similar system; and if progress toward these goals is not met there is a formal review process to evaluate whether the acquisition should continue or be terminated.

As defined here, capital assets are generally land, structures, equipment, and intellectual property (e.g., software) that are used by the Federal Government, including weapon systems. Not included are grants to States or others for their acquisition of capital assets. A complete definition is provided in section 300.4.

A. Planning

Investments in major capital assets proposed for funding in the Administration's budget should:

1. support core/priority mission functions that need to be performed by the Federal Government;

2. be undertaken by the requesting agency because no alternative private sector or governmental source can support the function more efficiently;

3. support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial, off-the-shelf technology;

4. demonstrate a projected return on the investment that is clearly equal to or better than alternative uses of available public resources. Return may include: improved mission performance in accordance with measures developed pursuant to the Government Performance and Results Act; reduced cost; increased quality, speed, or flexibility; and increased customer and employee satisfaction. Return should be adjusted for such risk factors as the project's technical complexity, the agency's management capacity, the likelihood of cost over-

runs, and the consequences of under- or non-performance.

5. for information technology investments, be consistent with Federal, agency, and bureau information architectures which: integrate agency work processes and information flows with technology to achieve the agency's strategic goals; reflect the agency's technology vision and year 2000 compliance plan; and specify standards that enable information exchange and resource sharing, while retaining flexibility in the choice of suppliers and in the design of local work processes;

6. reduce risk by: avoiding or isolating custom-designed components to minimize the potential adverse consequences on the overall project; using fully tested pilots, simulations, or prototype implementations when necessary before going to production; establishing clear measures and accountability for project progress; and, securing substantial involvement and buy-in throughout the project from the program officials who will use the system;

7. be implemented in phased, successive segments as narrow in scope and brief in duration as practicable, each of which solves a specific part of an overall mission problem and delivers a measurable net benefit independent of future segments, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time; and

8. employ an acquisition strategy that appropriately allocates risk between the Government and the contractor, effectively uses competition, ties contract payments to accomplishments, and takes maximum advantage of commercial technology.

Prototypes require the same justification as other capital assets.

As a general presumption, OMB will recommend new or continued funding only for those capital asset investments that satisfy these criteria. Funding for those projects will be recommended on a phased basis by segment, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time. (For more information, see section 300.4(b).)

OMB recognizes that many agencies are in the middle of ongoing projects, and they may not be able immediately to satisfy the criteria. For those projects that do not satisfy the criteria, OMB will consider requests to use FY 1998 and FY 1999 funds to finance additional planning, as necessary, to support the establishment of realistic cost, schedule, and performance goals for the completion of the project. This planning could include: the redesign of work processes, the evaluation of alternative solutions, the development of information system architectures, and, if necessary, the purchase and evaluation of prototypes. Realistic goals are necessary for agency portfolio analysis to determine the viability of the project, to provide the basis for fully funding the project to completion, and setting the baseline for management accountability to deliver the project within goals.

Because OMB considers this information essential to agencies' long-term success, OMB will use this information both in preparing the Administration's budget and, in conjunction with cost, schedule, and performance data, as apportionments are made. Agencies are encouraged to work with their OMB representative to arrive at a mutually satisfactory process, format, and timetable for providing the requested information.

B. Costs and Benefits

The justification of the project should evaluate and discuss the extent to which the project meets the above criteria and should also include:

1. an analysis of the project's total life-cycle costs and benefits, including the total budget authority required for the asset, consistent with policies described in OMB Circular A–94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (October 1992);

2. an analysis of the risk of the project including how risks will be isolated, minimized, monitored, and controlled, and, for major programs, an evaluation and estimate by the Chief Financial Officer of the probability of achieving the proposed goals;

3. if, after the planning phase, the procurement is proposed for funding in segments, an analysis showing that the proposed segment is economically and programmatically justified—that is, it is programmatically useful if no further investments are funded, and in this application its benefits exceed its costs; and

4. cost, schedule, and performance goals for the project (or the useful segment being proposed) that can be measured throughout the acquisition process using an earned value management system

or similar system. Earned value is described in Appendix 300C.

C. Principles of Financing

Principle 1: Full Funding

Budget authority sufficient to complete a useful segment of a capital project (or the entire capital project, if it is not divisible into useful segments) must be appropriated before any obligations for the useful segment (or project) may be incurred.

Enforcement: The *FY 1998 Budget* proposed a new Budget Enforcement Act scorekeeping rule to enforce this principle. The proposed rule is the following:

"An appropriations act that provides only partial funding for a useful segment of a capital project will be scored for the estimated total budget authority for the useful segment in the fiscal year in which the partial funding is provided, unless the appropriation language clearly prohibits obligations from being incurred until complete funding for the useful segment is provided.

"A useful segment of a capital project is defined as a component of a capital project that provides either:

- information that allows the agency to plan the capital project, develop the design, and assess the benefits, costs, and risks before proceeding to full acquisition of the useful asset (or canceling the acquisition). This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. Because of uncertainty regarding the identification of separate planning segments for research and development activities, the application of full funding concepts to research and development planning will need more study pending preparation of the *FY 1999 Budget;* or
- a useful asset for which the benefits exceed the costs even if no further funding is appropriated."

Explanation: Good budgeting requires that appropriations for the full costs of asset acquisition be enacted in advance to help ensure that all costs and benefits are fully taken into account at the time decisions are made to provide resources. Full funding with regular appropriations in the budget year also leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. Full funding increases the opportunity to use performance-based fixed price contracts, allows for more efficient work planning and management of the capital project, and increases the accountability for the achievement of the baseline goals.

When full funding is not followed and capital projects or useful segments are funded in increments, without certainty if or when future funding will be available, the result is sometimes poor planning, acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects, the loss of sunk costs, or inadequate funding to maintain and operate the assets.

Principle 2: Regular and Advance Appropriations

Regular appropriations for the full funding of a capital project or a useful segment of a capital project in the budget year are preferred. If this results in spikes that, in the judgment of OMB, cannot be accommodated by the agency or the Congress, a combination of regular and advance appropriations that together provide full funding for a capital project or a useful segment should be proposed in the budget.

Explanation: Principle 1 (Full Funding) is met as long as a combination of regular and advance appropriations provide budget authority sufficient to complete the capital project or useful segment. Full funding in the budget year with regular appropriations alone is preferred because it leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. In contrast, full funding for a capital project over several years with regular appropriations for the first year and advance appropriations for subsequent years may bias tradeoffs in the budget year in favor of the proposed asset because with advance appropriations the full cost of the asset is not included in the budget year. Advance appropriations, because they are scored in the year they become available for obligation, may constrain the budget authority and outlays available for regular appropriations of that year.

If, however, the lumpiness caused by regular appropriations cannot be accommodated within an agency or Appropriations Subcommittee, advance appropriations can ameliorate that problem while still providing that all of the budget authority is enacted in advance for the capital project or useful segment. The latter helps ensure that agencies develop appropriate plans and budgets and that all costs and benefits are identified prior to providing resources. In addition, amounts of advance appropriations can be matched to funding requirements

for completing natural components of the useful segment. Advance appropriations have the same benefits as regular appropriations for improved planning, management, and accountability of the project.

Principle 3: Separate Funding of Planning Segments

As a general rule, planning segments of a capital project should be financed separately from the procurement of a useful asset.

Explanation: The agency must have information that allows it to plan the capital project, develop the design, and assess the benefits, costs, and risks before proceeding to procurement of the useful asset. This is especially important for high risk acquisitions. This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. The construction of a prototype that is a capital asset, because of its cost and risk, should be justified and planned as carefully as the project itself. The process of gathering information for a capital project may consist of one or more planning segments, depending on the nature of the asset. Funding these segments separately will help ensure that the necessary information is available to establish cost, schedule, and performance goals before proceeding to procurement.

If budget authority for planning segments and procurement of the useful asset are enacted together, OMB may wish to apportion budget authority for one or several planning segments separately from procurement of the useful asset.

Principle 4: Accommodation of Lumpiness or "Spikes" and Separate Capital Acquisition Accounts

To accommodate lumpiness or "spikes" in funding justified capital acquisitions, agencies, working with OMB, are encouraged to aggregate financing for capital asset acquisitions in one or several separate capital acquisition budget accounts within the agency, to the extent possible within the agency's total budget request.

Explanation: Large, temporary, year-to-year increases in budget authority, sometimes called lumps or spikes, may create a bias against the acquisition of justified capital assets. Agencies, working with OMB, should seek ways to avoid this bias and accommodate such spikes for justified acquisitions. Aggregation of capital acquisitions in separate accounts may:

- reduce spikes within an agency or bureau by providing roughly the same level of spending for acquisitions each year;
- help to identify the source of spikes and to explain them. Capital acquisitions are more lumpy than operating expenses; and with a capital acquisition account, it can be seen that an increase in operating expenses is not being hidden and attributed to one-time asset purchases;
- reduce the pressure for capital spikes to crowd out operating expenses; and
- improve justification and make proposals easier to evaluate, since capital acquisitions are generally analyzed in a different manner than operating expenses (e.g., capital acquisitions have a longer time horizon of benefits and life-cycle costs).

D. Risk Management

Risk management should be central to the planning, budgeting, and acquisition process. Failure to analyze and manage the inherent risk in all capital asset acquisitions may contribute to cost overruns, schedule shortfalls, and acquisitions that fail to perform as expected. For each major capital project, a risk analysis that includes how risks will be isolated, minimized, monitored, and controlled may help prevent these problems.

The project cost, schedule and performance goals established through the planning phase of the project are the basis for approval to procure the asset and the basis for assessing risk. During the procurement phase, performance-based management systems (earned value or similar system) must be used to provide contractor and Government management visibility on the achievement of, or deviation from, goals until the asset is accepted and operational. If goals are not being met, performance-based management systems allow for early identification of problems, potential corrective actions, and changes to the original goals needed to complete the project and necessary for agency portfolio analysis decisions. These systems also allow for Administration decisions to recommend meaningful modifications for increased funding to the Congress, or termination of the project, based on its revised expected return on investment in comparison to alternative uses of the funds. Agencies must ensure that the necessary acquisition strategies are implemented to reduce the risk of cost escalation and the risk of failure to achieve schedule and performance goals. These strategies may include:

1. having budget authority appropriated in separate capital asset acquisition accounts;

2. apportioning budget authority for a useful segment;

3. establishing thresholds for cost, schedule, and performance goals of the acquisition, including return on investment, which if not met may result in cancellation of the acquisition;

4. selecting types of contracts and pricing mechanisms that are efficient and that provide incentives to contractors in order to allocate risk appropriately between the contractor and the Government;

5. monitoring cost, schedule, and performance goals for the project (or the useful segment being proposed) using an earned value management system or similar system. Earned value is described in Appendix 300C; and

6. if progress is not within 90 percent of goals, or if new information is available that would indicate a greater return on investment from alternative uses of funds, instituting senior management review of the project through portfolio analysis to determine the continued viability of the project with modifications, or the termination of the project, and the start of exploration for alternative solutions if it is necessary to fill a gap in agency strategic goals and objectives.

E. Glossary

Appropriations

An appropriation provides budget authority that permits Government officials to incur obligations that result in immediate or future outlays of Government funds.

Regular annual appropriations: These appropriations are:

- enacted normally in the current year;
- scored entirely in the budget year; and
- available for obligation in the budget year and subsequent years if specified in the language. (See "Availability," below.)

Advance appropriations: Advance appropriations may be accompanied by regular annual appropriations to provide funds available for obligation in the budget year as well as subsequent years. Advance appropriations are:

- enacted normally in the current year;
- scored after the budget year (e.g., in each of one, two, or more later years, depending on the language); and
- available for obligation in the year scored and subsequent years if specified in the language. (See "Availability," below.)

Availability: Appropriations made in appropriations acts are available for obligation only in the budget year unless the language specifies that an appropriation is available for a longer period. If the language specifies that the funds are to remain available until the end of a certain year beyond the budget year, the availability is said to be "multi-year." If the language specifies that the funds are to remain available until expended, the availability is said to be "no-year." Appropriations for major procurements and construction projects are typically made available for multiple years or until expended.

Capital Assets

See section 300.4: Definitions.

Capital Project and Useful Segments of a Capital Project

See section 300.4: Definitions.

Earned Value

Earned value refers to a performance-based management system for establishing baseline cost, schedule, and performance goals for a capital project and measuring progress against the goals. Earned value is described in Appendix 300C.

Funding (full funding and incremental (partial) funding)

See section 300.4: Definitions.

Risk Management

Risk management is an organized method of identifying and measuring risk and developing, selecting, and managing options for handling these risks. Before beginning any procurement, managers should review and revise as needed the acquisition plan to ensure that risk management techniques considered in the planning phase are still appropriate.

There are three key principles for managing risk when procuring capital assets: (1) avoiding or limiting the amount of development work (i.e., use off-the-shelf technology, if feasible); (2) making effective use of competition and financial incentives; and (3) establishing a performance-based acquisition management system that provides for accountability for program successes and failures, such as an earned value system or similar system.

There are several types of risk an agency should consider as part of risk management. The types of risk include:

- schedule risk;
- cost risk;
- technical feasibility;

- risk of technical obsolescence;
- dependencies between a new project and other projects or systems (e.g., closed architectures); and
- risk of creating a monopoly for future procurement.

APPENDIX 300B

Selected OMB Guidance and Other References Regarding Capital Assets

EXECUTIVE ORDER

Executive Order No. 12893, "Principles for Federal Infrastructure Investments," provides principles for the systematic economic analysis of infrastructure investments and their management. OMB Bulletin No. 94–16, Guidance on Executive Order No. 12893, "Principles for Federal Infrastructure Investments," (March 7, 1994), provides guidance for implementing this Order and appends the Order itself.

OMB CIRCULARS AND MEMORANDUM

OMB Circular No. A–11, *Preparation and Submission of Budget Estimates* (June 1997):

Part 1

Section 12.3 (l), Full funding, requires that the agency request include full funding for procurement and construction. See section 300.5 for more discussion of this policy.

Section 12.5 (g), Major systems acquisitions, states that agencies should develop their estimates of major systems acquisitions, including information technology systems, consistent with the requirements of FASA Title V.

Section 25, Character classification, requires information on different kinds of investment and grants to State and local governments.

Section 43 requires data on information technology.

Part 3: Planning, Budgeting, and Acquisition of Capital Assets

OMB Circular No. A–94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (October 1992, with periodic revisions of the discount rate), provides guidance on benefit-cost, cost-effectiveness, and lease-purchase analysis to be used by agencies in evaluating Federal activities including capital asset acquisition. It includes guidelines on the discount rate to use in evaluating future benefits and costs, the measurement of benefits and costs, the treatment of uncertainty, and other issues. This guidance must be followed in all analyses submitted to OMB in support of legislative and budget programs.

OMB Circular No. A–109, *Major System Acquisitions* (April 1976), establishes policies for planning major systems that are generally applicable to capital asset acquisitions.

OMB Circular No. A–127, *Financial Management Systems* (revised July 23, 1993), prescribes policies and standards for executive departments and agencies to follow in developing, operating, evaluating, and reporting on financial management systems.

OMB Circular No. A–130, *Management of Federal Information Resources* (revised February 8, 1996), provides principles for internal management and planning practices for information systems and technology. The revision was published in the *Federal Register* February 20, 1996.

OMB Memorandum M–97–02, *Funding Information Systems Investments* (October 25, 1996).

PUBLICATIONS

Office of Management and Budget, *Capital Programming Guide* (June 1997).

Office of Management and Budget, Office of Information and Regulatory Affairs, *Evaluating Information Technology Investments: A Practical Guide (Version 1.0)* (November 1995).

U.S. General Accounting Office, *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-Making,* GAO/AIMD–10.1.13 (February 1997).

U.S. General Accounting Office, *Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology,* GAO/AIMD–94–115 (May 1994).

U.S. General Services Administration, Office of Policy, Planning, and Evaluation, *An Analytical Framework for Capital Planning and Investment Control for Information Technology* (May 1996).

APPENDIX 300C

Illustrative Explanation of Earned Value Concept and Cost and Schedule Variances for Capital Assets

Introduction.—Earned value is a management technique that relates resource planning to schedules and to technical cost and schedule requirements. All work is planned, budgeted, and scheduled in time-phased "planned value" increments constituting a cost and schedule measurement baseline. There are two major objectives of an earned value system:

—to encourage contractors to use effective internal cost and schedule management control systems; and

—to permit the Government to be able to rely on timely data produced by those systems for determining product-oriented contract status.

Baseline.—The baseline plan in Table 1 shows that 6 work units (A–F) would be completed at a cost of $100 for the period covered by this report.

Table 1. Baseline Plan
Work Units

	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100

Schedule variance.—As work is performed, it is "earned" on the same basis as it was planned, in dollars or other quantifiable units such as labor hours. Planned value compared with earned value measures the dollar volume of work planned vs. the equivalent dollar volume of work accomplished. Any difference is called a schedule variance. In contrast to what was planned, Table 2 shows that work unit D was not completed and work unit F was never started, or $35 of the planned work was not accomplished. As a result, the schedule variance shows that 35 percent of the work planned for this period was not done.

Table 2. Schedule Variance
Work Units

	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100
Earned value ($)	10	15	10	10	20	.....	$65
Schedule variance	.....	.....	.....	−15	.....	−20	−$35 = −35%

Cost variance.—Earned value compared with the actual cost incurred (from contractor accounting systems) for the work performed provides an objective measure of planned and actual cost. Any difference is called a cost variance. A negative variance means more money was spent for the work accomplished than was planned. Table 3 shows the calculation of cost variance. The work performed was planned to cost $65 and actually cost $91. The cost variance is 40 percent.

Table 3. Cost Variance
Work Units

	A	B	C	D	E	F	Total
Earned value ($)	10	15	10	10	20	.....	$65
Actual cost ($)	9	22	8	30	22	.....	$91
Cost variance	1	−7	2	−20	−2	.....	−$26 = −40%

Spend comparison.—The typical spend comparison approach, whereby contractors report actual expenditures against planned expenditures is not related to the work that was accomplished. Table 4 shows a simple comparison of planned and actual spending, which is unrelated to work performed and therefore not a useful comparison. The fact that the total amount spent was $9 less than planned for this period is not useful without the comparisons with work accomplished.

Table 4: Spend Comparison Approach
Work Units

	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100
Actual cost ($)	9	22	8	30	22	.....	$91
Variance	−1	+7	−2	+5	+2	−20	−$9 = −9%